

## Observations of Erosional Problem Along Dale Street, Herculaneum, Missouri.

From field observations performed on July 22, 2004, and from studying maps of the area, it is apparent that the erosional problem on the west side of Dale Street is caused by natural stream bank erosion along Joachim Creek, and is unrelated to the slag pile located 1000 feet to the south.

### Details:

- The portion of the creek along Dale is the “cut bank” along a large meander of the creek.
- Joachim Creek is undercutting toe of steep slope along the bank, especially during times of high water. This causes mass wasting of material along the steep slope.
- This problem is intensified by the likely poor cohesive properties of the underlying material.
- Exposure of materials from mass wasting upslope accelerates erosions from rains due to loss of vegetation.
- This problem is progressive, and is accelerated by anthropogenic (land use) activities, which cause higher peak flows, resulting in a higher rate of erosion.
- Standard engineering practices to mitigate this problem include: vegetative controls, such as grass seedings to help prevent surface erosion; riprap, or heavy stones underlain by fabric placed along the bank and slope to prevent further erosion; bank sloping, or lowering grading of the steep slope to stabilize; reventments, or protective walls built along stream banks made of pervious or impervious materials; and stream flow controls, such as jetties, projected into the stream to protect areas subjected to high velocity currents. A combination of these controls would likely be necessary for this particular situation.

